

## عنوان مقاله:

Flexural Behaviour of Lightweight Foamed Concrete Beams Reinforced with GFRP Bars

## محل انتشار:

شماره ۲ دوره ۴ فصل February (سال: ۱۳۹۷)

تعداد صفحات اصل مقاله: ۱۶

## نویسندگان:

Suhad M Abd - Prof. assist, Civil Engineering Department, University of Diyala., Iraq

Dhamyaa Ghalib - MSc student, Civil Engineering Department, University of Diyala., Iraq

## خلاصه مقاله:

Lightweight foamed concrete is a type of concrete characterized by light in self-weight, self-compaction, self-leveling, thermal isolation, and a high ratio of weight to strength. The advantages of GFRP bars include lightweight, high longitudinal tensile strength, non-conductivity, and resistance to corrosion. This study investigated the behavior of LWFC beams reinforced with GFRP bars under flexural loading. A total of four reinforced concrete beams were cast, where it consisted of two LWFC beams and two normal weight concrete beam which acted as control specimen. One of the lightweight foamed concrete beams and the normal concrete beams is reinforced with two GFRP bars and the other reinforced with two steel bars. All beams were designed with singly reinforced of two bars of diameter ۱۲ mm. The LWFC beams were with cement to sand ratio (1:1) and average dried density of  $1800 \pm$  kg/m<sup>۳</sup>. The main variables considered in this study was type of concrete and type of reinforcement. The flexural parameters investigated are ultimate load, crack width, ductility, deflection and stiffness. The lightweight foamed concrete beam reinforced with GFRP bars showed deflection and crack width greater than in beam reinforced with .steel bars due to the low modulus of elasticity of GFRP bars

## کلمات کلیدی:

Foamed Concrete; GFRP Bars; Flexural Behavior; Light Weight

## لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/۸۰۴۰۱۸>